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ABSTRACT

Interchange 57 (Watson and Johnston, 1998) reported on a study of around 300 Primary 1 children in which the effectiveness of a synthetic phonics teaching program was examined. The synthetic phonics program was by far the most effective. A study described the progress the children have made from Primary 1 through to the end of Primary 5, focusing on comparing the attainment of boys with that of girls, and examining the extent to which children underachieve when taught by synthetic phonics compared with an analytic phonics program. Results indicated that at Primary 5 (when children were 9.7 years old) the girls had a mean word reading age of 11.6 years, and the boys of 12.2 years; spelling and comprehension scores were also significantly above chronological age but did not differ significantly between sexes. Findings suggest that by Primary 5 children who had received synthetic phonics training had a 26-month advantage over chronological age. (NKA)

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Accelerating Reading and Spelling with Synthetic Phonics:

A Five Year Follow Up

Rhona S. Johnston (University of Hull) and Joyce E. Watson (University of St. Andrews)

Introduction

Interchange 57 (Watson and Johnston, 1998) reported on a study of around 300 Primary 1 children in which we examined the effectiveness of a synthetic phonics teaching programme. Performance on the synthetic phonics programme was compared with performance on a typical analytic phonics programme, and also with a similar programme that included a substantial element of phonological awareness training. The synthetic phonics programme was by far the most effective. After a training period of 16 weeks, the synthetic phonics taught children were reading and spelling seven months above chronological age, and were a similar amount ahead of the children taught by the two analytic phonics programmes. In this report we describe the progress the children have made from Primary 1 through to the end of Primary 5, focusing on comparing the attainment of boys with that of girls. We have also examined the extent to which children underachieve when taught by synthetic phonics compared with an analytic phonics programme.

With what sort of phonics are you familiar?

If whole words are shown, pronounced and then analysed, it is analytic phonics.

Methodology

Three training programmes were carried out for 16 weeks, starting soon after entry to Primary 1. For 20 minutes a day, children were taught either 1) by a synthetic phonics programme, or 2) by an analytic phonics programme modelled on the methods commonly used in Scotland, or 3) by an analytic phonics plus phonological awareness training programme. Word reading and spelling were measured at the end of these programmes using the British Ability Scales Word Reading Test (Elliott et al, 1977), a measure of single word reading, and the Schonell Spelling Test (1952). At the end of the initial programme, all of the children who had been taught by the two analytic phonics programmes then carried out the synthetic phonics programme, which they completed by the end of Primary 1. The children's progress in reading and spelling has been monitored every year since then; from Primary 2 onwards we have additionally measured reading comprehension using the Primary Reading Test (France, 1981).

Phonics approaches for the teaching of reading

There are two major approaches to teaching children the alphabetic principle: analytic and synthetic phonics.

Analytic phonics

Analytic phonics is well known in Scotland, where it has formed part of the early years reading programme for many years. Teaching starts at the whole word level, and then involves showing children patterns in the English spelling system. It is generally taught in parallel with, or some time after, graded reading books, which are introduced using a look and say approach. Children are typically taught one letter sound per week and are shown a series of alliterative pictures and words which start with that sound, e.g. car, cat, candle, cake, castle, caterpillar. When the 26 initial letter sounds have been taught in this way, children are introduced to middle sounds, e.g. cat, bag, rag etc., and final sounds, e.g. nap, cup, pip etc. This stage is usually reached at the end of Primary 1. At this point some teachers may show children how to sound and blend the consecutive letters in unfamiliar words to be able to pronounce them, e.g. 'cuh-ah-tuh' for 'cat'. Starting in Primary 2, initial consonant blends are taught, e.g. 'bl', 'cr', 'sp', followed by final

consonant blends, e.g. 'nt', 'ng', 'st'; vowel and consonant digraphs, e.g. 'ee', 'oo', 'ch', 'sh'; and silent 'e', e.g. 'slate', 'blue'. This programme is often completed at the end of Primary 3.

What is synthetic phonics?

Synthetic phonics teaches letter sounds very rapidly and children are explicitly shown how to blend the sounds together to pronounce unfamiliar words.

Synthetic phonics

Synthetic phonics is used in Germany and Austria and is generally taught before children are introduced to books or reading. It involves teaching small groups of letters very rapidly, and children are shown how letter sounds can be co-articulated to pronounce unfamiliar words. In a UK version of synthetic phonics, i.e. Hickey's Multi-Sensory Language Course (Augur and Briggs,1992), the first block of letter sounds is 's', 'a', 't', 'i', 'p', 'n', which make up more three-letter words than any other six letters. Children are shown many of the words that these letters generate (e.g. 'sat', 'tin', 'pin').

In our version of synthetic phonics children use magnetic letters to build up words and to help them understand how letter sounds can be blended together to pronounce the words. In order to read a word, the appropriate magnetic letters are set out; the children then blend the letter sounds together, smoothly co-articulating them, whilst pushing the letters together. The approach is also used for learning to spell (and to reinforce blending for reading). The children listen to a spoken word, select the letters for the sounds, and then push the letters together, sounding and blending them to pronounce the word. Consonant blends are not explicitly taught at all as they can be read by blending, although digraphs (i.e. a phoneme represented by two letters, such as 'sh', 'th', 'ai', 'oa') are taught.

A typical lesson using our scheme would be as follows. The children will have been taught the sounds for the letters 't', 'a', and 'p'. A child at the front of the class is asked to select these letters from the teacher's large magnetic board, and to place them in a row below the other letters of the alphabet. The class then give the sounds of the letters, 't', 'a', 'p', and then blend the sounds together to pronounce the word 'tap', whilst the letters are pushed together. To practise spelling the teacher might hold up a picture of a word. The children pick out the letters for the sounds that they hear in the word, and place them together on their own magnetic boards. They will then sound and blend, pushing the letters together.

Long term follow up

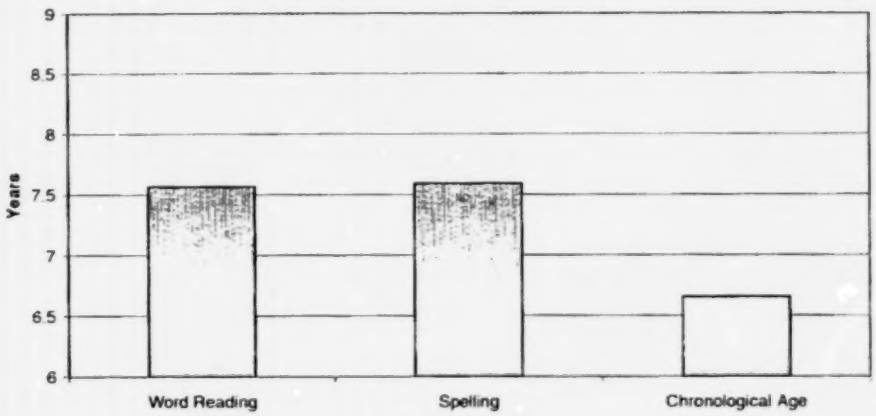
Although the synthetic phonics children in our study were significantly ahead of the two analytic phonics taught groups in reading and spelling at the end of the programme, it was important to carry out a long term follow up. The National Reading Panel in the United States found, in a review of the literature, that gains from experimental programmes diminish in subsequent years (National Reading Panel, 2000).

At the end of Primary 2, the 264 children available for testing who had been taught by the synthetic phonics method (either early or late on in Primary 1) were reading and spelling on average eleven months ahead of chronological age (see Figure 1). The children did not differ in reading skills according to whether they learnt the synthetic phonics method early or late in Primary 1, but the early synthetic phonics taught children were better spellers. There were no differences between girls and boys at this age.

What are the advantages of synthetic phonics?

A major advantage is its early implementation, which means that children can decode unfamiliar words when they are introduced to text.

Figure 1:
Mean word reading, spelling and chronological ages with synthetic phonics, end of Primary 2



Gender differences

It is a common finding in many countries that girls learn to read better than boys, and that boys are over-represented in dyslexic samples. For example, at the age of nine, girls have been found to perform better than boys in England (Brooks et al, 1996) and New Zealand (Elley, 1992). In a previous study of 228 children taught by the analytic phonics approach in Scotland, by the end of Primary 3 the boys were, on average, reading three months behind the girls, and spelling was around four months behind (Watson, 1998).

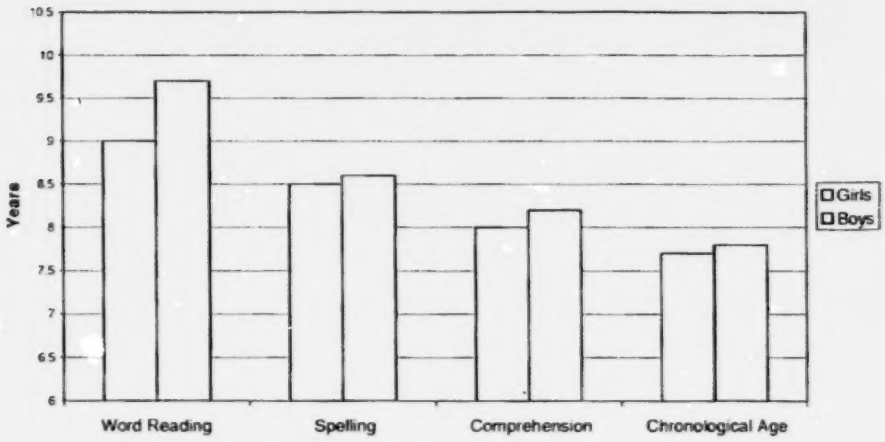
We therefore expected that by Primary 3 our synthetic phonics trained cohort would show girls to be ahead of boys in reading and spelling. In carrying out comparisons across years we have analysed data from the subset of children for whom we have a complete set of test scores available for word recognition, spelling, and reading comprehension in Primary 3, 4 and 5. This allows us to look at the development of the same group of children across time.

In Primary 3, our synthetic phonics trained boys were 9.6 months ahead of analytic boys for reading comprehension.

Would this encourage you to change your methods for teaching reading?

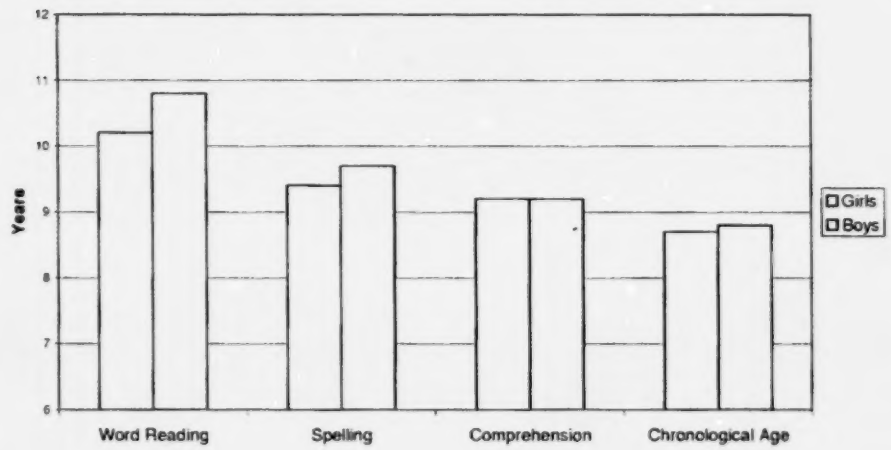
Contrary to our expectations, the boys had not fallen behind the girls in word reading and spelling in Primary 3. In fact they were a significant eight months ahead of the girls in word reading (see Figure 2). The boys had a slight, but not statistically significant, advantage in spelling and reading comprehension. However, the boys' reading comprehension was five months ahead of chronological age, yet boys had been five months behind in Primary 3 when taught by the analytic phonics method (Watson, 1998).

Figure 2: Mean word reading, spelling, comprehension and chronological age, synthetic phonics taught boys and girls, Primary 3



The question arose as to whether this advantage for boys was a one-off result that would not be retained in subsequent years. However, we found that in both Primary 4 and 5 these same boys were a significant seven months ahead of the girls in word reading ability (see Figures 3 and 4).

Figure 3: Mean word reading, spelling, comprehension and chronological ages, synthetic phonics taught boys and girls, Primary 4

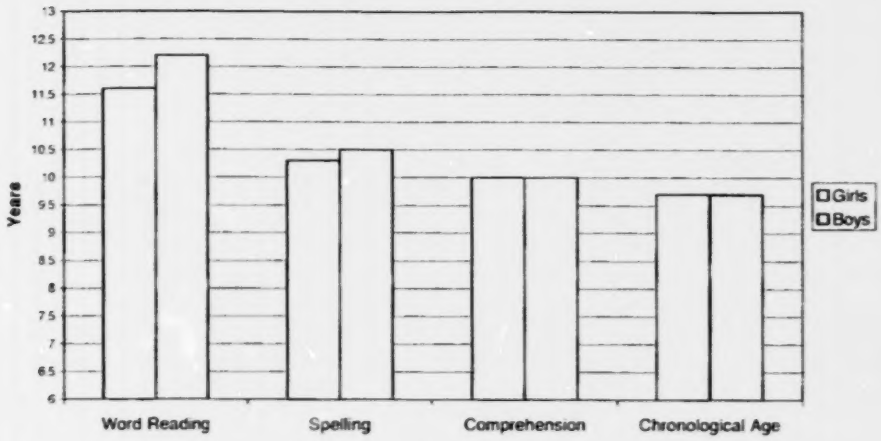


Primary 4 and 5 children taught by our synthetic phonics programme significantly retain their reading, spelling and comprehension skills above chronological age.

Does this have any implications for the Language Arts Curriculum across the school?

At Primary 5, this means that when the children were 9.7 years old, the girls had a mean word reading age of 11.6 years, and the boys of 12.2 years. Spelling and comprehension scores were also significantly above chronological age but did not differ significantly between boys and girls.

Figure 4: Mean word reading, spelling, comprehension and chronological ages, synthetic phonics taught boys and girls, Primary 5



Thus the benefits of the synthetic phonics training lasted for at least four years after the end of the programme. For word reading skill the effects increased in magnitude, from a seven month advantage in Primary 1 to a 26 month advantage in Primary 5, over what would be expected for chronological age.

Would you expect the early acceleration in word reading to be maintained?

We found that it increased over the five years of the study without further intervention.

Reading irregular words

One concern about such a method is that it might only be effective with regularly spelt words, and that it might prove to be a handicap in reading irregular words, such as 'once' and 'said'. However, at the end of the programme in Primary 1 we examined the synthetic phonics taught children's ability to read irregular words, and found it to be significantly better than that of the two analytic phonics trained groups. Furthermore, at that stage the synthetic phonics trained children were the only ones that were able to read words by analogy. For example, on being told the pronunciation of the unknown word 'ring', these children would then be able to read the unknown words 'sing' and 'king', whereas the analytic phonics taught children would not.

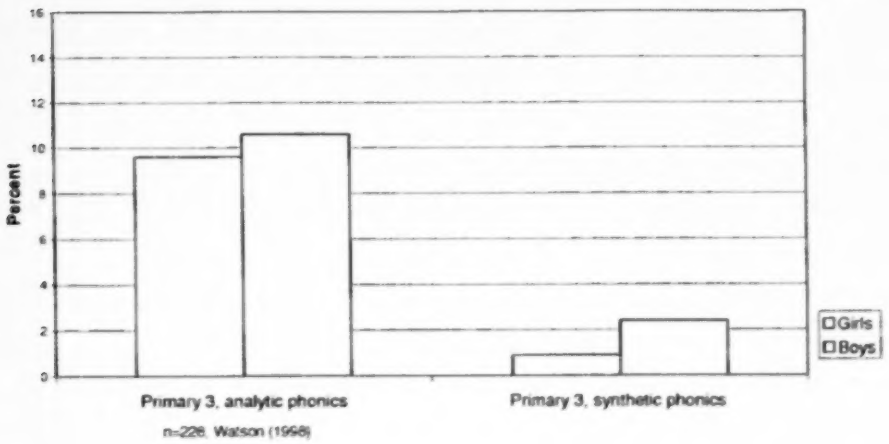
Underachievers

Another area of interest was to examine the long term impact of synthetic phonics tuition on the incidence of moderate and severe reading difficulties. The proportion of children reading 12 or more months behind chronological age in Primary 3 was 1.7%. Three boys out of 126 were behind (2.4%) and one girl out of 112 (0.9%), with one boy being more than two years behind. However, in Watson's (1998) study of 228 children being taught by the analytic phonics method (see Figure 5), 10.1% were reading 12 or more months behind (10.6% of boys and 9.6% of girls); one girl and two boys were over two years behind.

Rapid identification of low achievers is possible after the 16 week programme.

What are the implications of this for learning support teachers?

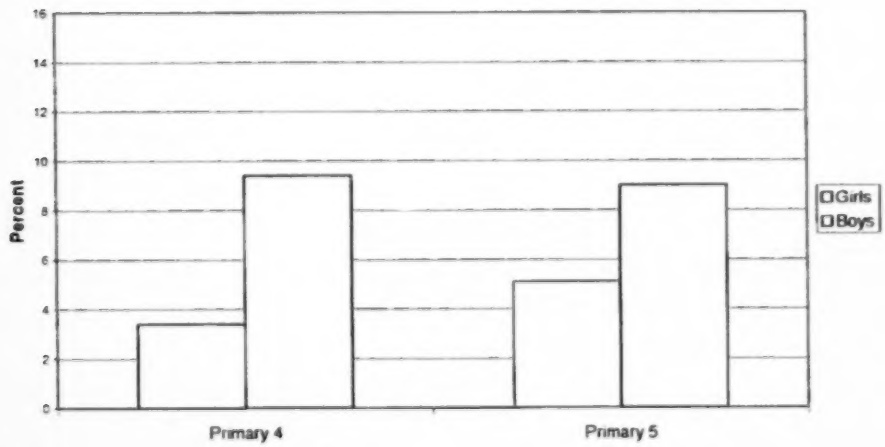
Figure 5: Children scoring 12 or more months behind chronological age in word reading with analytic and synthetic phonics in Primary 3



n=228. Watson (1998)

We have charted the proportion of children in the synthetic phonics study falling a year or more behind in Primary 4 and 5 (see Figure 6). 6.5% of children were behind in Primary 4 (12 boys out of 128, 9.4%; four girls out of 119, 3.4%), with no child more than two years behind. In Primary 5, 7.1% of children were more than 12 months behind (11 boys, 9.0%; six girls, 5.1%), with one boy being more than two years behind.[1]

Figure 6: Children scoring 12 or more months behind chronological age in word reading with synthetic phonics in Primary 4 and 5



1 No control group of analytic phonics taught children is available with which to compare the proportion of low achievers at Primary 4 and 5.

The increasing proportion of low achievers suggests that some children who initially made good progress are now showing a slowing of development. However, most of the children had only moderate reading difficulties, being between one and two years behind chronological age. Only one child was 28 months behind in reading in Primary 5, constituting 0.4% of the sample. In Primary 5 we introduced a Revisiting Programme to remind the low achievers of the principles of the synthetic phonics method. We monitored a group of 12 children, and found that over the year they on average gained a year in reading competence, contrasting with gains of around only six months in Primary 4.

Discussion and conclusions

We have found that the beneficial effects of our synthetic phonics programme are long lasting; for word reading the gains increased in magnitude from a seven month advantage over chronological age in Primary 1 to a 26 month advantage in Primary 5. The reason for this continued increase is likely to be that, in learning to sound and blend, children are given a procedure that they can apply for themselves whenever they meet an unfamiliar word; that is, they have a method for decoding unfamiliar words when they meet them in text.

The proportion of children who had moderate reading problems was found to be increasing but was still only 7% at the end of Primary 5, and of these only one child had severe reading problems at that stage (0.4% of the sample).

The advantage for boys that emerged in Primary 3 was entirely unexpected; keeping parity with the girls would in itself have been a very good outcome. This superiority has now been maintained over three successive years. The children are currently being followed through Primary 6 and 7, so that we can determine whether boys keep their advantage to the end of their primary schooling. It is not clear whether all synthetic phonics programmes will be so effective for boys, but it is evident that the methods used in our study gave them long lasting benefits.

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